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DIALOG(R) File 351:Derwent WPI  
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WPI Acc No: 1990-291508/199039

XRPX Acc No: N90-224407

Component residual life evaluation system - determines residual life using different data with selection of shortest residual life value

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Number of Countries: 003 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
DE 4008560	A	19900920	DE 4008560	A	19900316	199039	B
JP 3015768	A	19910124	JP 9064233	A	19900316	199252	
DE 4008560	C2	19951102	DE 4008560	A	19900316	199548	
US 5608845	A	19970304	US 90494629	A	19900316	199715	
			US 93158439	A	19931129		

Priority Applications (No Type Date): JP 8963852 A 19890317

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

DE 4008560 C2 28 G07C-003/08

US 5608845 A 24 G06F-015/18 Div ex application US 90494629

JP 3015768 A G01R-031/00

Abstract (Basic): DE 4008560 A

The component residual life evaluation system determines 3 respective residual life values using experimentally determined aging data for the component characteristics and experimentally determined aging data for the appts. function and both of these. The shorter of the 3 obtained residual life values is selected for the output residual life value.

Pref. the residual life calculations are obtained for a number of individual components and for the associated appts. as a whole.

USE/ADVANTAGE - Power station. Gives clear display of remaining life of separate parts of aggregate. (30pp)

Abstract (Equivalent): DE 4008560 C

Residual working life of e.g. a power station is determined by determining a first residual life based, on experimental ageing data w.r.t. the deterioration of a characteristic of at least one part of the plant. A second residual life is determined from experimental data w.r.t. at least one function of the plant.

An optimal residual life is derived from the first and second residual lines. A third residual life is derived from the first and second ageing data and from a relationship between these data. The shortest of the three residual lives is then selected as the optimal residual life.

ADVANTAGE - Improved reliability.

Dwg. 0/19

Abstract (Equivalent): US 5608845 A

An expert system for diagnosing a remaining lifetime (L) of an apparatus included in a plant and selecting an apparatus to be inspected, said expert system comprising:

an external system interface for taking history data of the plant under on line operation from an external sensor;

a terminal system for taking data including knowledge data through an input/output apparatus;  
a user interface connected to said external system interface and said terminal system;  
a data base connected to said user interface for managing data including the history data supplied from said external system interface and said terminal system via said user interface;  
a knowledge acquire support apparatus connected to said user interface for receiving the knowledge data from said terminal system via said user interface;  
a knowledge base connected to said knowledge acquire support apparatus for storing the knowledge data supplied from said knowledge acquire support apparatus; and  
an inference apparatus connected to said knowledge base and said data base for diagnosing the remaining lifetime ( $L$ ) of an apparatus of the plant based on said data including the history data and the knowledge data respectively stored in said data base and said knowledge base;  
wherein said terminal system takes two kinds of data including:  
function test data which is acquired in a function test of a constructive apparatus of the plant during a periodical check and is stored in said data base every time the periodical check is carried out, and  
parts degradation characteristic data which is acquired in an accelerated lifetime test of parts of the constructive apparatus or materials of the plant and is stored in said data base,  
wherein knowledge data is obtained from specification of the constructive apparatus and parts, performance, and maintenance information, or from past experience of experts concerning preventive maintenance work.

Dwg.1/19

Title Terms: COMPONENT; RESIDUE; LIFE; EVALUATE; SYSTEM; DETERMINE; RESIDUE ; LIFE; DATA; SELECT; SHORT; RESIDUE; LIFE; VALUE

Derwent Class: T05; X11

International Patent Class (Main): G01R-031/00; G06F-015/18; G07C-003/08

International Patent Class (Additional): G07C-003/08

File Segment: EPI

Manual Codes (EPI/S-X): T05-G02; X11-A09

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